

TECHNICAL REVIEW DOCUMENT
For
RENEWAL
of
OPERATING PERMIT 95OPEP147
to be issued to:

US Air Force
Peterson Air Force Base
El Paso County
Source ID 0410016

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March 26, 2003

I. PURPOSE

This document will establish the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the renewed Operating Permit proposed for this site. The original Operating Permit was issued March 3, 1998, and expires on March 3, 2003. This document is designed for reference during review of the proposed permit by the EPA, the public and other interested parties. The conclusions made in this report are based on information provided in the permit renewal application submitted on March 4, 2002, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.cdphe.state.co.us/ap/Titlev.html>. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit renewal application have been reviewed in accordance with the requirements of Colorado Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This Operating Permit incorporates and shall be considered to be a combined Construction/Operating Permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this Operating Permit without applying for a revision to this permit or for an additional or revised Construction Permit.

In addition to the changes requested by Peterson Air Force Base (PAFB) in the renewal application the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

II. SOURCE DESCRIPTION

This facility is located in Colorado Springs, Colorado, in an area classified as attainment for all the regulated criteria pollutants. There is no Federal Class I designated area within 100 kilometers of the Base, and no affected state within 50 miles. Florissant Fossil Beds is a Federal Class II land area within 100 kilometers of the facility. Florissant Fossil Beds has been designated by the State to have

the same sulfur dioxide increment as a Federal Class I area.

For the preparation of the Title V renewal application the estimated annual emissions for all the sources were compiled in an emissions inventory. The sources evaluated included approximately 254 boilers, furnaces and hot water heaters; 40 emergency standby generators; 57 storage tanks; three refueling operations; a vehicle maintenance facility; 74 operational shops; an aircraft parts paint booth; a jet engine testing facility; paper disintegrators, aircraft deicing operations and routine aircraft maintenance activities. The related emissions estimates are shown later in this review document. The data compilation found Peterson AFB remains subject to the provisions of the Title V operating permit program based on the potential emissions of nitrogen oxides. The emission inventory also verified that Peterson remains a true minor source for hazardous air pollutant emissions.

The majority of the individual activities/sources reported in the inventory may be classified as insignificant sources. The sources that are not insignificant are to be addressed in this Title V permit. The emissions related to the provision of backup generators is expected to increase as Peterson continues the on-going effort to equip their facilities with the emergency back-up generation required by the Air Force.

The following actual and Potential To Emit (PTE) emission estimates were obtained from the Peterson 2001 data year inventory. For each emission group, a conservative approach was used to prepare the emission estimates. If reference manuals provided a range of emission factors for the various sources in a group, the highest factor was selected to provide the worst case estimation of the emissions for the entire group. While this approach may overestimate the emissions, it greatly simplifies the emission estimation process.

The 6,000 gallon aviation gasoline tanker used by the aero club has been removed from the Base and Construction Permit 02EP0357 has been cancelled.

DATA YEAR 2001 ESTIMATED ACTUAL EMISSIONS

Emission Source Group	PM	PM₁₀	NOx	SO₂	CO	VOC	HAPS
Diesel Generators	0.24	0.24	3.87	0.22	0.85	0.28	0.01
Fire Pumps	0.02	0.02	0.30	0.02	0.06	0.02	0.03
Jet Engine Testing	0.01	0.01	0.06	0	0.02	0.01	0
Vehicle Maintenance					0.07		
NG Boilers, Furnaces, Heaters	1.21	1.21	15.91	0.10	16.04	0.88	0.30
Fire Fighting Training	0.08	0.08	0.48	0	0.13	0.21	0.01
Storage Tanks						15.73	1.16
Vehicle Refueling - Gasoline						15.39	1.36
Vehicle Refueling - Gasoline						0.09	0
Tanker Truck Loading						0.09	0.01
Chemical Usage (EMIS)						35.80	4.52
Paint Booth (Uncontrolled)	0	0				0	0.01
Safety Kleen						0.22	
Pesticides						0.03	0.09
Cooling Towers	0.47	0.47				1.01	0
Paper Disintegrator	2.37	2.37					
Woodworking	0.99	0.99					
Construction Operations	5.81	5.81					
Unpaved Roadways	46.9	46.9					
Fuel Cell Maintenance						0.57	0.02
Equipment Leaks						0.26	0.03
TOTALS	58.10	58.10	20.62	0.34	17.17	70.59	7.55

POTENTIAL TO EMIT, TONS PER YEAR

Emission Source Group	PM	PM₁₀	NO_x	SO₂	CO	VOC
Diesel Generators	3.55	3.55	162.50	3.53	36.97	5.62
Fire Pumps	0.46	0.46	6.48	0.43	1.39	0.53
Jet Engine Testing	0	0	0.09	0.01	0.03	0.01
Vehicle Maintenance					0.07	
NG Boilers, Furnaces, Heaters	1.45	1.45	19.10	0.12	16.04	1.05
Fire Fighting Training	0.10	0.10	0.56	0	0.15	0.24
Storage Tanks						40.70
Vehicle Refueling- Gasoline						44.35
Vehicle Refueling - Diesel						0.14
Tanker Truck Loading						0.11
Chemical Usage (EMIS)						42.66
Safety Kleen						0.26
Pesticides						0.04
Cooling Towers	0.53	0.53				1.12
Paper Disintegrator	0.12	0.12				
Woodworking	1.18	1.18				
Paint Booth	0.92	0.92				7.0
Fuel Cell Maintenance						0.86
Equipment Leaks						0.26
Construction Operations	42.59	42.59				
Unpaved Roadways	46.90	46.90				
Abrasive Blasting	0	0				0
TOTALS	97.80	97.80	188.73	4.09	54.65	144.95

Peterson AFB had previously converted from JP-8 to propane for fire training activities. The storage of propane has been exempted from the requirement for a risk management plan. The propane storage exemption removes the Base from the requirements of Section 112(r)(7), the Accidental Release Program of the Clean Air Act.

File information and the Title V application indicates none of the sources are subject to the Federal Title IV, Acid Rain Program.

III. EMISSION SOURCES

The following sources are specifically regulated under terms and conditions of the Operating Permit for this site:

A. Gasoline Service Stations - Bldgs 1360 and 1700

1. Applicable Requirements – Construction permits were requested for these two service stations in order to establish the Potential-to-Emit (PTE) with Federally enforceable limits. The Federally enforceable limits were established directly in the previous version of this Operating Permit as combined a Construction Permit/Operating Permit.

2. Emission Factors - The emission factor shown in this Operating Permit is a composite of the emission factor for uncontrolled displacement losses from the storage tank and the factor for spillage. The fuel storage tanks are equipped with Stage I vapor recovery systems; however, a conservative estimate of the emissions was requested based on no vapor control for the tanks. The estimated actual annual emissions may be adjusted to reflect the reduced emissions resulting from the vapor recovery systems.

3. Monitoring Plan - The monthly gasoline throughput is monitored to provide records for determining compliance with the annual limits.

4. Compliance Status - The Division accepts this source was in compliance at the time the Title V application was submitted.

B. Document Disintegrators

Two document disintegrators exist at the Base. The operating time for the units has increased to a level where the estimated emissions require a construction permit. Construction Permit 02EP0495 is being issued directly in this Operating Permit as a combined Construction Permit/Operating Permit.

1. Applicable Requirements – As just stated, Construction Permit 02EP0495 is being established directly in this Operating Permit. The Construction Permit establishes the Potential-to-Emit (PTE) for the disintegrators with Federally enforceable limits.

2. Emission Factors – The Base requested to use a particulate emission factor of 200 pounds per ton of documents destroyed based on information provided by the manufacturer. Each unit is equipped with an integral cyclone for collection of the processed material. The cyclone is considered part of the equipment and not a control device. The cyclone removal efficiency is estimated at 85%. The integral cyclone results in an uncontrolled emission factor for the disintegrators of 30 pounds per ton of documents destroyed. The disintegrators are equipped with a fabric filter. A particulate removal efficiency of 99% was assigned to the fabric filter for estimating the emissions and all the emissions are assumed to be smaller than 10 microns (PM₁₀). Application of the fabric filter removal efficiency results in the controlled emission factor of 0.3 pounds per ton of documents destroyed shown in this Operating Permit.

3. Monitoring Plan – The small amount of emissions does not justify a performance test to demonstrate compliance. Visible emissions are used to monitor the performance of the fabric filter.

In the absence of credible evidence to the contrary, compliance with the particulate emission limit is presumed when there are no visible emissions other than steam.

4. Compliance Status - The Division accepts this source was in compliance at the time the construction permit application was submitted based on the information available.

C. Stand-by Generators

Bldg 218 - 850 HP Diesel Fired IC Engine Powering 600 KW Generator

Bldg 2 - Three 2020 HP Diesel Fired IC Engine Driven Generators

Bldg 1844 - One 2680 HP Diesel Fired IC Engine Driven Generator

1. Applicable Requirements - The applicable requirements were established by Construction Permits 02EP0111, 02EP0197 and 02EP0692. Since the standby generators addressed by Construction Permits 02EP0111, 02EP197 and 02EP0692 will have been in use for more than 180 days by the due date of the first semi-annual monitoring report required by this Operating Permit, the Division considers that the Responsible Official certification submitted with that report to serve as the self-certification for the Construction Permits if the self-certification of compliance with the applicable requirements of the respective construction permits has not been submitted by the time this renewal is issued..

2. Emission Factors - Emissions from reciprocating engines are produced during the combustion process, and are dependent upon the air/fuel mixture, engine design specifications, and specific properties of the fuel being burned. The pollutants of concern are Nitrogen Oxides (NO_x), Carbon Monoxide (CO), Sulfur Dioxide (SO₂) and Volatile Organic Compounds (VOC). Small quantities of Hazardous Air Pollutants (HAPs) are also emitted when combustion is incomplete. Emissions factors from the EPA AP-42 reference document were used to estimate the engine emissions.

3. Monitoring Plan - The emissions are to be calculated based on the fuel use by the engines. The operating hours of each 2020 horsepower engine at Building 2 must be monitored to demonstrate compliance with the hour limit restriction in the permit. The emissions are to be calculated monthly to determine compliance with the annual (12-month rolling total) limits.

4. Compliance Status -In the absence of any credible evidence to the contrary, the Division accepts the engines are in compliance.

D. Bldg 216 Paint Booth

1. Applicable Requirements - The applicable requirements are being established by Construction Permit 02EP0633 directly in this Operating Permit as a combination construction permit/operating permit in accordance with Section I, Condition 1.3 of the Operating Permit. Since the paint booth will have been in use for more than 180 days by the due date of the first semi-annual monitoring report required by this Operating Permit, the Division considers that the Responsible Official certification submitted with that report serves as the self-certification for the Construction Permit. Good work practices are to be used to minimize the release of fugitive volatile organic compound and hazardous air pollutant emissions.

2. Emission Factors – The emissions are estimated by the use of a mass balance incorporating the quantity of the materials used, the Material Safety Data Sheets (MSDS) information regarding volatile component of the material and the hazardous air pollutants content. The mass balance is dependent on an accurate accounting of the materials used.

3. Monitoring Plan - The mass balance is to be used monthly to estimate the emissions and determine compliance with the annual (12-month rolling total) limits.

4. Compliance Status – The Division accepts the first Title V compliance certification report after the paint booth becomes operational as the self-certification that the operation is in compliance with the construction permit provisions..

E. Base-Wide Hazardous Air Pollutants

At the time the previous Operating Permit was prepared the Base desired to have the maximum flexibility to accommodate unknown future missions. The desired flexibility created the potential for an aircraft parts painting activity to be subject to the Aerospace Maximum Achievable Control Technology (MACT). The Base implemented a record keeping system for estimating the hazardous air pollutant emissions to demonstrate compliance with provisions of the Operating Permit. Conservative emissions estimate with the initial record keeping system indicated the Base could avoid the Aerospace MACT provisions by accepting Federally enforceable limits to keep the individual and total hazardous air pollutant emissions below the MACT thresholds. Additional improvements to the record keeping system produced data demonstrating that the Base was actually a true minor source for hazardous air pollution emissions. The progression of the data development resulted in a request to modify the Operating Permit to provide hazardous air pollutant limits, and then a modification to remove the limits. However, the monitoring of the hazardous air pollutant emissions must be maintained in order for the Base to demonstrate it remains a true minor source for hazardous air pollutants and not subject to the provisions of the Aerospace Maximum Achievable Control Technology (MACT). The hazardous air pollutant emissions estimate must be reviewed each calendar year to ensure the Base maintains the minor source status.

1. Applicable Requirements - The hazardous air pollutant emissions must be reported for each calendar year and the associated emissions fees paid in accordance with the provisions of Colorado Regulation No. 3.

2. Emission Factors - Hazardous air pollutant emissions for each source are estimated by using the mass balance approach of calculating the emissions from the amount of materials used. The mass balance is dependent on an accurate accounting of the kinds or types of materials used, the amounts used on a periodic basis, and the Material Safety Data Sheets (MSDS) or manufacturer's information on the material composition. Good work practices are an integral part of controlling the emissions.

3. Monitoring Plan - The monitoring plan calls for the amount of the materials used and the associated emissions to be calculated for each calendar month. The monthly totals provide the information needed for demonstrating compliance with the annual limits.

4. Compliance Status - The Division accepts this source was in compliance at the time the Title V application was submitted.

F. Bldg 688 Tank 15 – 206,791 gallons JP-8 Fuel Storage

1. Applicable Requirements - In accordance with 40 CFR Part 60, Subpart Kb, a record of the dimensions and the calculated capacity of the fuel storage tank shall be maintained and made available for Division review and inspection upon request. The applicable requirements of Construction Permit 03EP???? are being established directly in this Operating Permit in accordance with Section I, Condition 1.3 of this Operating Permit.

2. Emission Factors – Not applicable.

3. Monitoring Plan – Maintain a record of the tank dimensions and a calculation of the tank storage capacity.

4. Compliance Status – The Division accepts this source was in compliance at the time the Title V permit was prepared.

IV. Permit Shield

The intent of the permit shield is to provide limited protection to the facility in the event of an error in the evaluation of whether a regulation, or portion of a regulation applies. The facility identifies the issue and presents its position. The Division reviews the position. If the Division and the facility mutually agree on the position, the issue is recorded in the permit. If, at a later date, it is determined that an error was made in the mutual decision, the facility is protected from enforcement action until the permit can be reopened and the correct requirements and a compliance schedule inserted.

In this application, an extensive list of non-applicable sections of the Federal and State regulations are identified for the sources, and the request for the shield justified.

V. Accidental Release Program (112(r))

Section 112(r) of the Clean Air Act mandates a new federal focus on the prevention of chemical accidents. Source subject to these provisions must develop and implement risk management programs that include hazard assessment, a prevention program, and an emergency response program. They must prepare and implement a Risk Management Plan (RMP) as specified in the Rule.

Based on the information provided by the applicant, this facility is not subject to the provisions of the Accidental Release Prevention Plan of Section 112 (r)(7) of the Clean Air Act.

V. Emission Factors

From time to time published emission factors are changed based on new or improved data. A logical concern is what happens if the use of the new emission factor in a calculation results in a source being out of compliance with a permit limit. For this operating permit, the emission factors or emission factor equations included in the permit are considered to be fixed until changed by the permit. Obviously, factors dependent on the fuel sulfur content or heat content can not be fixed and will vary with the test results. The formula for determining the emission factors is, however, fixed. It is the responsibility of the permittee to be aware of changes in the factors, and to notify the Division in writing of impacts on the permit requirements when there is a change in factors. Upon

notification, the Division will work with the permittee to address the situation.

VI. Alternative Operating Scenarios

No alternative operating scenarios were requested.

VII. Compliance Assurance Monitoring (CAM) Plan

The following emission points at this facility use a control device to achieve compliance with an emission limitation or standard to which they are subject and have pre-control emissions that exceed or are equivalent to the major source threshold. They are therefore subject to the provisions of the CAM program as set forth in 40 CFR Part 64 as adopted by reference into Colorado Regulation No. 3, Part C, Section XIV:

None